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EXAMINER	
BRAUTIGAM, ALYSA N	
ART UNIT	**PAPER NUMBER**
2676	

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/674,363	DIEFENBAUGH ET AL.	
	Examiner	Art Unit	
	Alysa N. Brautigam	2676	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *29 September 2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-52* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-52* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *29 September 2003* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Drawings

1. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference character(s) not mentioned in the description:

- Figure 2, Item 200 (see paragraph 0012)
- Figure 5: Control
- Figure 5: Display Interrupt
- Figure 5: Enable
- Figure 5: MUX following Gamma Unit and Blender Unit
- Figure 5, Item 555
- Figure 5, Item 510

Corrected drawing sheets in compliance with 37 CFR 1.121(d), or amendment to the specification to add the reference character(s) in the description in compliance with 37 CFR 1.121(b) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be

notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

2. The disclosure is objected to because of the following informalities:

Abstract: Sentence beginning with "Thereby..." should more correctly be a continuation of the preceding sentence and not an independent sentence.

Paragraph 0004, Line 1: "effected" should be "affected"

Paragraph 0006, Line 3: "a generally" should be "are generally"

Paragraphs 0022-0025: A number of the reference numerals are incorrect, i.e., line 2 of paragraph 0022 discloses the "display signals 505" when they should be "display signals 555." See also lines 1-3 and 5 of paragraph 0023, line 1 of paragraph 0024, and line 3 of paragraph 0026.

Appropriate correction is required.

Claim Objections

3. Claim 11 is objected to because of the following informalities: Line 3 states, "determining **am** ambient light level **for** an environment...." Appropriate correction is required.

4. Claim 38 is objected to because of the following informalities: Line 4 states, "determine **am** ambient light level **for** an environment...." Appropriate correction is required.

Claim Rejections - 35 USC § 112

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claims 9 and 11 recite the limitation "color transformation" in line 1. There is insufficient antecedent basis for this limitation in the claim.

7. Claims 27 and 52 recite the limitation "brightness control agent" in line 1. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

9. Claims 1-2, 4-5, 8-14, 16-20, 23-29, 31-32, 35-41, 43-46, and 49-52 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hino (5,956,015) in view of Wicker et al. (6,441,857).

10. In regards to claim 1, Hino discloses a method comprising:

- converting color data for an image to be displayed from a first color space to a second color space (Figures 8-14 disclose the conversion from RGB to CIE XYZ; col. 7: 62-64);

- modifying, in the second color space, a color intensity for one or more portions of the image (Figures 8-14; col. 8: 10-48);
- converting the modified color data from the second color space to a third color space (Figures 8-14 disclose the conversion from CIE XYZ to RGB; col. 8: 48-51).

While Hino discloses the conversion to the third color space and further suggests the use of gamma transformed values in the third color space (R'G'B'), Hino does not specifically disclose wherein a gamma transformation is applied on the modified color data in the third color space to generate adjusted color data for one or more portions of the image. Wicker discloses a method and apparatus for modifying video data for display on a television and, in the background section, discloses the commonality of applying a gamma transformation on the modified color data in the RGB color space to generate adjusted color data for one or more portions of the image (col. 2: 4-20 and 44-47) and storing the adjusted color data in a frame buffer (col. 2: 4-20). It would have been obvious to one skilled in the art to which it pertains at the time the invention was made to integrate the teachings of Hino and Wicker's disclose of background art to achieve a system and method wherein modifications to the intensity of a pixel are made in an alternate color space in order to improve the efficiency of processing.

11. In regards to claim 2, the combination of Hino and Wicker discloses the method of claim 1, as contained hereinabove. In addition, Hino discloses wherein the color intensity is modified before the gamma transformation is applied (Hino: Figures 8-14 disclose the intensity adjustment performed in the second color space prior to

transformation to the third color space [RGB] which is gamma transformed prior to display).

12. In regards to claim 4, the combination of Hino and Wicker discloses the method of claim 1, as contained hereinabove. In addition, Hino discloses wherein the third color space is the color space to be used to display the image (Hino: col. 8: 48-53).

13. In regards to claim 5, the combination of Hino and Wicker disclose the method of claim 1, as contained hereinabove. In addition, Hino discloses wherein the first color space and the third color space are the same color space (Hino: Figures 8-14 disclose the first and third color spaces as RGB).

14. In regards to claim 8, the combination of Hino and Wicker discloses the method of claim 1, as contained hereinabove. In addition, Hino discloses wherein the first color space is chosen from the group of YUV, YCrCb, CIE, HSV, YIQ, CMYK, RBGA, Pantone, Munsell, NCS and the second color space is chosen from the group of YUV, YCrCb, CIE, HSV, YIQ, CMYK, RBGA, Pantone, Munsell, NCS (Figures 8-14 where the first color space is RGB and the second color space is CIE XYZ).

15. In regards to claim 9, the combination of Hino and Wicker discloses the method of claim 1, as contained hereinabove. In addition, Hino discloses wherein applying the color transformation on the color data in the second color space comprises:

- determining an image brightness profile for the image to be displayed (Figure 8 and col. 8: 38-45);
- generating a color transformation in the second color space based on the image brightness profile (Figure 8 and col. 8: 38-50); and

- applying the color transformation to the color data (Figure 8 and col. 8: 18-50).

16. In regards to claim 10, the combination of Hino and Wicker discloses the method of claim 9, as contained hereinabove. In addition, Hino discloses the method further comprising modifying a backlight intensity based on the image brightness profile (col. 6: 47-49).

17. In regards to claim 11, the combination of Hino and Wicker discloses the method of claim 1, as contained hereinabove. In addition, Hino discloses wherein applying the color transformation on the color data in the second color space comprises:

- determining an ambient light level for an environment for a display device (col. 6: 44-46 and 63-66; col. 8: 18-37);
- generating a color transformation in the second color space based on the ambient light level (col. 8: 18-37); and
- applying the color transformation on the color data (col. 8: 18-37).

18. In regards to claim 12, the combination of Hino and Wicker discloses the method of claim 11, as contained hereinabove. In addition, Hino discloses wherein the method further comprises modifying a backlight intensity based on the ambient light level (col. 8: 18-56).

19. In regards to claim 13, Hino discloses an apparatus comprising:

- a first memory to store color data for in image to be displayed, wherein the color data is stored in a first color space (col. 6: 36-39);

- a first conversion agent communicatively coupled with the first memory to receive the color data in the first color space and to convert the color data to a second color space (Figures 8-14 – RGB --> XYZ conversion);
- a color brightness agent communicatively coupled with the first conversion agent to modify color brightness characteristics, using the second color space, of one or more portions of the image to be displayed (Figures 8-14 – Luminance adjustment);
- a second conversion agent communicatively coupled with the color brightness agent to convert the color data from the second color space to a third color space (Figures 8-14 – XYZ --> RGB conversion).

While Hino discloses the conversion and storage of the data and further suggests the use of gamma transformed values in the third color space (R'G'B'), Hino does not specifically disclose wherein a gamma transformation is applied on the modified color data in the third color space to generate adjusted color data for one or more portions of the image and then stored. Wicker discloses a method and apparatus for modifying video data for display on a television and, in the background section, discloses the commonality of applying a gamma transformation on the modified color data in the RGB color space to generate adjusted color data for one or more portions of the image (col. 2: 4-20 and 44-47) and storing the adjusted color data in a frame buffer (col. 2: 4-20). It would have been obvious to one skilled in the art to which it pertains at the time the invention was made to integrate the teachings of Hino and Wicker's disclose of background art to achieve a system and method wherein modifications to the intensity

of a pixel are made in an alternate color space in order to improve the efficiency of processing.

20. In regards to claim 14, the combination of Hino and Wicker discloses the apparatus of claim 13, as contained hereinabove. In addition, Hino discloses wherein the color brightness characteristics are modified before the gamma transformation is applied (Hino: Figures 8-14 disclose the intensity adjustment performed in the second color space prior to transformation to the third color space [RGB] which is gamma transformed prior to display).

21. In regards to claim 16, the combination of Hino and Wicker discloses the apparatus of claim 13, as contained hereinabove. In addition, Hino discloses wherein the third color space is the color space to be used to display the image (Hino: col. 8: 48-53).

22. In regards to claim 17, the combination of Hino and Wicker discloses apparatus of claim 16 further comprising:

- a color control agent communicatively coupled with the second memory to further modify the modified color data in the third color space (Figures 8-14: Luminance Adjustment); and
- a third memory communicatively coupled with the color control agent to store the further modified color data in the third color space (Figures 8-14: Luminance Coefficients Storage).

23. In regards to claim 18, the combination of Hino and Wicker discloses the apparatus of claim 17, as contained hereinabove. In addition, Hino discloses wherein

the first memory, the second memory and the third memory comprise a single memory device (col. 6: 36-39).

24. In regards to claim 19, the combination of Hino and Wicker discloses the apparatus of claim 17, as contained hereinabove. In addition, Hino discloses wherein the color control agent comprises a processor executing instructions (col. 6: 36-39).

25. In regards to claim 20, the combination of Hino and Wicker discloses the apparatus of claim 17, as contained hereinabove. In addition, Hino discloses wherein the color control agent uses a color look-up table storing data in the first color space to further modify the color data (col. 1: 38-62 discloses the variety of methods which can be used including color look-up tables).

26. In regards to claim 23, the combination of Hino and Wicker discloses the apparatus of claim 13, as contained hereinabove. In addition, Hino discloses wherein the first color space is chosen from the group of YUV, YCrCb, CIE, HSV, YIQ, CMYK, RBGA, Pantone, Munsell, NCS and the second color space is chosen from the group of YUV, YCrCb, CIE, HSV, YIQ, CMYK, RBGA, Pantone, Munsell, NCS (Figures 8-14 where the first color space is RGB and the second color space is CIE XYZ).

27. In regards to claim 24, the combination of Hino and Wicker discloses the apparatus of claim 13, as contained hereinabove. In addition, Hino discloses wherein the color brightness agent comprises a processor executing instructions (col. 6: 36-38).

28. In regards to claim 25, the combination of Hino and Wicker discloses the apparatus of claim 13, as contained hereinabove. In addition, Hino discloses wherein the color brightness agent uses a color look-up table or gamma transfer function storing

data in the second color space to modify the color data (col. 1: 38-62 discloses the variety of methods which can be used including color look-up tables).

29. In regards to claim 26, the combination of Hino and Wicker discloses the apparatus of claim 13, as contained hereinabove. In addition, Hino discloses the apparatus further comprising an ambient light sensor communicatively coupled with the brightness control agent to provide data indicating an ambient light level, wherein the brightness control agent uses the ambient light level to modify the color data (Figures 13 and 14 – Ambient Light; col. 6: 44-46 and 63-66; col. 8: 18-37).

30. In regards to claim 27, the combination of Hino and Wicker discloses the apparatus of claim 13, as contained hereinabove. In addition, Hino discloses wherein the brightness control agent further controls a backlight intensity of a display device (col. 6: 47-49).

31. In regards to claim 28, Hino discloses an article comprising a computer-readable medium having stored thereon instructions (col. 6: 36-39) that, when executed, cause one or more processors to:

- convert color data for an image to be displayed from a first color space to a second color space (Figures 8-14 disclose the conversion from RGB to CIE XYZ; col. 7: 62-64);
- modifying, in the second color space, a color intensity for one or more portions of the image (Figures 8-14; col. 8: 10-48);

- converting the modified color data from the second color space to a third color space (Figures 8-14 disclose the conversion from CIE XYZ to RGB; col. 8: 48-51).

While Hino discloses the conversion to the third color space and further suggests the use of gamma transformed values in the third color space (R'G'B'), Hino does not specifically disclose wherein a gamma transformation is applied on the modified color data in the third color space to generate adjusted color data for one or more portions of the image. Wicker discloses a method and apparatus for modifying video data for display on a television and, in the background section, discloses the commonality of applying a gamma transformation on the modified color data in the RGB color space to generate adjusted color data for one or more portions of the image (col. 2: 4-20 and 44-47) and storing the adjusted color data in a frame buffer (col. 2: 4-20). It would have been obvious to one skilled in the art to which it pertains at the time the invention was made to integrate the teachings of Hino and Wicker's disclose of background art to achieve a system and method wherein modifications to the intensity of a pixel are made in an alternate color space in order to improve the efficiency of processing.

32. In regards to claim 29, the combination of Hino and Wicker discloses the article of claim 28, as contained hereinabove. In addition, Hino discloses wherein the color intensity is modified before the gamma transformation is applied (Hino: Figures 8-14 disclose the intensity adjustment performed in the second color space prior to transformation to the third color space [RGB] which is gamma transformed prior to display).

33. In regards to claim 31, the combination of Hino and Wicker discloses the article of claim 28, as contained hereinabove. In addition, Hino discloses wherein the third color space is the color space to be used to display the image (Hino: col. 8: 48-53).

34. In regards to claim 32, the combination of Hino and Wicker discloses the article of claim 28, as contained hereinabove. In addition, Hino discloses wherein the first color space and the third color space are the same color space (Hino: Figures 8-14; col. 8: 48-53).

35. In regards to claim 35, the combination of Hino and Wicker discloses the article of claim 28, as contained hereinabove. In addition, Hino discloses wherein the first color space is chosen from the group of YUV, YCrCb, CIE, HSV, YIQ, CMYK, RBGA, Pantone, Munsell, NCS and the second color space is chosen from the group of YUV, YCrCb, CIE, HSV, YIQ, CMYK, RBGA, Pantone, Munsell, NCS (Figures 8-14 where the first color space is RGB and the second color space is CIE XYZ).

36. In regards to claim 36, the combination of Hino and Wicker discloses the article of claim 28, as contained hereinabove. In addition, Hino discloses wherein the instructions that cause the one or more processors to apply the color transformation on the color data in the second color space comprise instructions that, when executed, cause the one or more processors to:

- determine an image brightness profile for the image to be displayed (Figure 8 and col. 8: 38-45);
- generating a color transformation in the second color space based on the image brightness profile (Figure 8 and col. 8: 38-50); and

- applying the color transformation to the color data (Figure 8 and col. 8: 18-50).

37. In regards to claim 37, the combination of Hino and Wicker discloses the article of claim 36, as contained hereinabove. In addition, Hino discloses the article further comprising instructions that, when executed, cause the one or more processors to modify a backlight intensity based on the image brightness profile (col. 6: 47-49).

38. In regards to claim 38, the combination of Hino and Wicker discloses the article of claim 28 wherein the instructions that cause the one or more processors to apply the color transformation on the color data in the second color space comprise instructions that, when executed, cause the one or more processors to:

- determine an ambient light level for an environment for a display device (col. 6: 44-46 and 63-66; col. 8: 18-37);
- generating a color transformation in the second color space based on the ambient light level (col. 8: 18-37); and
- applying the color transformation on the color data (col. 8: 18-37).

39. In regards to claim 39, the combination of Hino and Wicker discloses the article of claim 38, as contained hereinabove. In addition, Hino discloses the article further comprising instructions that, when executed, cause the one or more processors to modify a backlight intensity based on the ambient light level (col. 8: 18-56).

40. In regards to claim 40, Hino discloses a system comprising:

- a first memory to store color data for in image to be displayed, wherein the color data is stored in a first color space (col. 6: 36-39);

- a first conversion agent communicatively coupled with the first memory to receive the color data in the first color space and to convert the color data to a second color space (Figures 8-14 – RGB --> XYZ conversion);
- a color brightness agent communicatively coupled with the first conversion agent to modify color brightness characteristics, using the second color space, of one or more portions of the image to be displayed (Figures 8-14 – Luminance adjustment);
- a second conversion agent communicatively coupled with the color brightness agent to convert the color data from the second color space to a third color space (Figures 8-14 – XYZ --> RGB conversion);
- an ambient light sensor communicatively coupled with the first conversion agent (Figure 4, item 46; Figure 9 – Ambient Light Measurement; Figure 13, Ambient Light Parameter; col. 6: 44-46).

While Hino clearly discloses the input and output of data such that the input and output lines are operatively coupled to various components, Hino fails to teach a bus operatively coupled to the individual components. Official Notice is taken that both the concept and the advantages for providing a bus operatively coupled to the components is well known and expected in the art. It would have been obvious to one skilled in the art to which it pertains at the time the invention was made to have included a bus operatively coupled to the various components as these are known to provide improved data transfer within a computing system and thereby speed up processing while reducing space, heat, and cost. While Hino discloses the conversion and storage of the

data and further suggests the use of gamma transformed values in the third color space (R'G'B'), Hino does not specifically disclose wherein a gamma transformation is applied on the modified color data in the third color space to generate adjusted color data for one or more portions of the image and then stored. Wicker discloses a method and apparatus for modifying video data for display on a television and, in the background section, discloses the commonality of applying a gamma transformation on the modified color data in the RGB color space to generate adjusted color data for one or more portions of the image (col. 2: 4-20 and 44-47) and storing the adjusted color data in a frame buffer (col. 2: 4-20). It would have been obvious to one skilled in the art to which it pertains at the time the invention was made to integrate the teachings of Hino and Wicker's disclose of background art to achieve a system and method wherein modifications to the intensity of a pixel are made in an alternate color space in order to improve the efficiency of processing.

41. In regards to claim 41, the combination of Hino and Wicker discloses the system of claim 40, as contained hereinabove. In addition, Hino discloses wherein the color brightness characteristics are modified before the gamma transformation is applied (Hino: Figures 8-14 disclose the intensity adjustment performed in the second color space prior to transformation to the third color space [RGB] which is gamma transformed prior to display).

42. In regards to claim 43, the combination of Hino and Wicker discloses the system of claim 40, as contained hereinabove. In addition, Hino discloses wherein the third color space is the color space to be used to display the image (Hino: col. 8: 48-53).

43. In regards to claim 44, the combination of Hino and Wicker discloses the system of claim 43 further comprising:

- a color control agent communicatively coupled with the second memory to further modify the modified color data in the third color space (Figures 8-14: Luminance Adjustment); and
- a third memory communicatively coupled with the color control agent to store the further modified color data in the third color space (Figures 8-14: Luminance Coefficients Storage).

44. In regards to claim 45, the combination of Hino and Wicker discloses the system of claim 44, as contained hereinabove. In addition, Hino discloses wherein the first memory, the second memory and the third memory comprise a single memory device (col. 6: 36-39).

45. In regards to claim 46, the combination of Hino and Wicker discloses the system of claim 44, as contained hereinabove. In addition, Hino discloses wherein the color control agent uses a color look-up table storing data in the first color space to further modify the color data (col. 1: 38-62 discloses the variety of methods which can be used including color look-up tables).

46. In regards to claim 49, the combination of Hino and Wicker discloses the system of claim 40, as contained hereinabove. In addition, Hino discloses wherein the first color space is chosen from the group of YUV, YCrCb, CIE, HSV, YIQ, CMYK, RBGA, Pantone, Munsell, NCS and the second color space is chosen from the group of YUV,

YCrCb, CIE, HSV, YIQ, CMYK, RBGA, Pantone, Munsell, NCS (Figures 8-14 where the first color space is RGB and the second color space is CIE XYZ).

47. In regards to claim 50, the combination of Hino and Wicker discloses the system of claim 40, as contained hereinabove. In addition, Hino discloses wherein the color control agent comprises a processor executing instructions (col. 6: 36-39).

48. In regards to claim 51, the combination of Hino and Wicker discloses the system of claim 40, as contained hereinabove. In addition, Hino discloses wherein the color brightness agent uses a color look-up table or gamma transfer function storing data in the second color space to modify the color data (col. 1: 38-62 discloses the variety of methods which can be used including color look-up tables).

49. In regards to claim 52, the combination of Hino and Wicker discloses the system of claim 40, as contained hereinabove. In addition, Hino discloses wherein the brightness control agent further controls a backlight intensity of a display device (col. 8: 18-56).

50. Claims 3, 6-7, 15, 21-22, 30, 33-34, 42, and 47-48 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hino (5,956,015) in view of Wicker et al. (6,441,857) and in further view of Jack ("Video Demystified, Second Edition").

51. In regards to claim 3, the combination of Hino and Wicker discloses the method of claim 1, as contained hereinabove. While the combination clearly discloses the gamma transform, the combination does not specifically disclose wherein the gamma transformation is applied before the color intensity is modified. Jack discloses the

commonality of performing gamma correction prior to conversion from a first color space to a second color space such as disclosed in claim 1 (pp 39-61). In addition, it is very common in the art to use gamma transformed data for the color conversion. It would have been obvious to one skilled in the art to which it pertains at the time the invention was made to integrate the teachings of Hino, Wicker, and Jack to achieve a system and method wherein data is gamma transformed prior to subsequent processing in order to linearize the intensity output of the CRT and reduce transmission-induced noise.

52. In regards to claim 6, the combination of Hino and Wicker discloses the method of claim 1, as disclosed hereinabove. While the combination clearly discloses the first color space as RGB, the combination does not specifically disclose wherein the second color space comprises a hue-saturation-intensity (HSI) color space. Jack discloses the conversion equations to transform any first color space, such as the RGB color space, into a second color space, such as the HSI color space (pp 39-61). It would have been obvious to one skilled in the art to which it pertains at the time the invention was made to integrate the teachings of Hino, Wicker, and Jack to achieve a system and method wherein a first color space, such as an RGB color space, is converted into a second color space, such as HSI, in order to operate in a color space designed to more approximate the way humans perceive and interpret color.

53. In regards to claim 7, the combination of Hino and Wicker discloses the method of claim 1, as disclosed hereinabove. While the combination clearly discloses the use of two common color spaces, the combination does not specifically disclose wherein the first color space comprises a YUV color space and the second color space comprises a

hue-saturation-intensity (HSI) color space. Jack discloses the conversion equations to transform any first color space, such as the YUV color space, into a second color space, such as the HSI color space (pp 39-61). It would have been obvious to one skilled in the art to which it pertains at the time the invention was made to integrate the teachings of Hino, Wicker, and Jack to achieve a system and method wherein a first color space, such as an YUV color space, is converted into a second color space, such as HSI, in order to operate in a color space designed to more approximate the way humans perceive and interpret color.

54. In regards to claim 15, the combination of Hino and Wicker discloses the apparatus of claim 13, as contained hereinabove. While the combination clearly discloses the gamma transform, the combination does not specifically disclose wherein the gamma transformation is applied before the color intensity is modified. Jack discloses the commonality of performing gamma correction prior to conversion from a first color space to a second color space such as disclosed in claim 1 (pp 39-61). In addition, it is very common in the art to use gamma transformed data for the color conversion. It would have been obvious to one skilled in the art to which it pertains at the time the invention was made to integrate the teachings of Hino, Wicker, and Jack to achieve a system and method wherein data is gamma transformed prior to subsequent processing in order to linearize the intensity output of the CRT and reduce transmission-induced noise.

55. In regards to claim 21, the combination of Hino and Wicker discloses the apparatus of claim 13, as disclosed hereinabove. While the combination clearly

discloses the first color space as RGB, the combination does not specifically disclose wherein the second color space comprises a hue-saturation-intensity (HSI) color space. Jack discloses the conversion equations to transform any first color space, such as the RGB color space, into a second color space, such as the HSI color space (pp 39-61). It would have been obvious to one skilled in the art to which it pertains at the time the invention was made to integrate the teachings of Hino, Wicker, and Jack to achieve a system and method wherein a first color space, such as an RGB color space, is converted into a second color space, such as HSI, in order to operate in a color space designed to more approximate the way humans perceive and interpret color.

56. In regards to claim 22, the combination of Hino and Wicker discloses the apparatus of claim 13, as disclosed hereinabove. While the combination clearly discloses the use of two common color spaces, the combination does not specifically disclose wherein the first color space comprises a YUV color space and the second color space comprises a hue-saturation-intensity (HSI) color space. Jack discloses the conversion equations to transform any first color space, such as the YUV color space, into a second color space, such as the HSI color space (pp 39-61). It would have been obvious to one skilled in the art to which it pertains at the time the invention was made to integrate the teachings of Hino, Wicker, and Jack to achieve a system and method wherein a first color space, such as an YUV color space, is converted into a second color space, such as HSI, in order to operate in a color space designed to more approximate the way humans perceive and interpret color.

57. In regards to claim 30, the combination of Hino and Wicker discloses the article of claim 28, as contained hereinabove. While the combination clearly discloses the gamma transform, the combination does not specifically disclose wherein the gamma transformation is applied before the color intensity is modified. Jack discloses the commonality of performing gamma correction prior to conversion from a first color space to a second color space such as disclosed in claim 1 (pp 39-61). In addition, it is very common in the art to use gamma transformed data for the color conversion. It would have been obvious to one skilled in the art to which it pertains at the time the invention was made to integrate the teachings of Hino, Wicker, and Jack to achieve a system and method wherein data is gamma transformed prior to subsequent processing in order to linearize the intensity output of the CRT and reduce transmission-induced noise.

58. In regards to claim 33, the combination of Hino and Wicker discloses the article of claim 28, as disclosed hereinabove. While the combination clearly discloses the first color space as RGB, the combination does not specifically disclose wherein the second color space comprises a hue-saturation-intensity (HSI) color space. Jack discloses the conversion equations to transform any first color space, such as the RGB color space, into a second color space, such as the HSI color space (pp 39-61). It would have been obvious to one skilled in the art to which it pertains at the time the invention was made to integrate the teachings of Hino, Wicker, and Jack to achieve a system and method wherein a first color space, such as an RGB color space, is converted into a second color space, such as HSI, in order to operate in a color space designed to more approximate the way humans perceive and interpret color.

59. In regards to claim 34, the combination of Hino and Wicker discloses the article of claim 28, as disclosed hereinabove. While the combination clearly discloses the use of two common color spaces, the combination does not specifically disclose wherein the first color space comprises a YUV color space and the second color space comprises a hue-saturation-intensity (HSI) color space. Jack discloses the conversion equations to transform any first color space, such as the YUV color space, into a second color space, such as the HSI color space (pp 39-61). It would have been obvious to one skilled in the art to which it pertains at the time the invention was made to integrate the teachings of Hino, Wicker, and Jack to achieve a system and method wherein a first color space, such as an YUV color space, is converted into a second color space, such as HSI, in order to operate in a color space designed to more approximate the way humans perceive and interpret color.

60. In regards to claim 42, the combination of Hino and Wicker discloses the system of claim 40, as contained hereinabove. While the combination clearly discloses the gamma transform, the combination does not specifically disclose wherein the gamma transformation is applied before the color intensity is modified. Jack discloses the commonality of performing gamma correction prior to conversion from a first color space to a second color space such as disclosed in claim 1 (pp 39-61). In addition, it is very common in the art to use gamma transformed data for the color conversion. It would have been obvious to one skilled in the art to which it pertains at the time the invention was made to integrate the teachings of Hino, Wicker, and Jack to achieve a system and

method wherein data is gamma transformed prior to subsequent processing in order to linearize the intensity output of the CRT and reduce transmission-induced noise.

61. In regards to claim 47, the combination of Hino and Wicker discloses the system of claim 40, as disclosed hereinabove. While the combination clearly discloses the first color space as RGB, the combination does not specifically disclose wherein the second color space comprises a hue-saturation-intensity (HSI) color space. Jack discloses the conversion equations to transform any first color space, such as the RGB color space, into a second color space, such as the HSI color space (pp 39-61). It would have been obvious to one skilled in the art to which it pertains at the time the invention was made to integrate the teachings of Hino, Wicker, and Jack to achieve a system and method wherein a first color space, such as an RGB color space, is converted into a second color space, such as HSI, in order to operate in a color space designed to more approximate the way humans perceive and interpret color.

62. In regards to claim 48, the combination of Hino and Wicker discloses the system of claim 40, as disclosed hereinabove. While the combination clearly discloses the use of two common color spaces, the combination does not specifically disclose wherein the first color space comprises a YUV color space and the second color space comprises a hue-saturation-intensity (HSI) color space. Jack discloses the conversion equations to transform any first color space, such as the YUV color space, into a second color space, such as the HSI color space (pp 39-61). It would have been obvious to one skilled in the art to which it pertains at the time the invention was made to integrate the teachings of Hino, Wicker, and Jack to achieve a system and method wherein a first color space,

such as an YUV color space, is converted into a second color space, such as HSI, in order to operate in a color space designed to more approximate the way humans perceive and interpret color.

Conclusion

63. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Eachbach (5,414,538) disclose an image dependent exposure enhancement method and device having RGB conversion and gamma correction. Kasson (5,774,112) discloses a method and apparatus for correction of digital color image with the preservation of the chromaticity of the image. Ouchi et al. (6,064,396) dislcoses a two-step gamma correction system and method. Noguchi (6,101,272) discloses a color transforming method. Marsden et al. (6,340,975) dislcoses a system and method for gamma correction with color separation.

64. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alysa N. Brautigam whose telephone number is 571-272-7780. The examiner can normally be reached on 8:00 am - 4:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matthew Bella can be reached on 571-272-7778. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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anb

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